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BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE  
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In Cooperation with State, Federal and Other Agencies

COTTON INSECT CONDITIONS - JULY 7, 1951  
(Sixth Cotton Insect Survey Report for 1951)

Boll weevils are now generally less abundant than at this date in 1949 and 1950 but they are as widely distributed. The weevil does not threaten to become as serious over wide areas as in 1949 and 1950. The amount of damage it will cause depends upon the extent and carefulness with which recommended insecticides are used when needed; and weather conditions. Mild, humid weather, with many showers, such as prevailed over wide areas during the summers of 1949 and 1950 favor the weevils; whereas, hot, dry weather is generally unfavorable. July and August are the crucial months in most areas where the boll weevil is a pest. Never before have so many farmers made a real effort to control the weevils with insecticides.

Although the boll weevil easily ranks first as a national menace to the cotton crop of 1951, the pink bollworm is now causing more damage than the boll weevil in several Texas counties and threatens to cause serious losses in a dozen or more counties before the crop is harvested.

The yellow-striped armyworm, Prodenia ornithogalli Guen., sometimes known as the cotton boll cutworm, and often mistaken for the bollworm, has been causing serious damage to cotton in Texas, but it may occur in any area where cotton is grown.

The garden webworm, Loxostege similalis (Guen.) sometimes referred to as the "careless weed worm", or the "webworm" of cotton is causing losses to cotton in Texas, Oklahoma, Arkansas, Louisiana, and Mississippi.

The cotton leafworm has not been reported in the United States this year. By July 1 last year it had reached at least 26 counties in Texas, 2 counties in Oklahoma, and Madison Parish, Louisiana.

INSECTICIDES

Oklahoma: C. F. Stiles, Extension Entomologist, wrote on July 3: "Reports are reaching this office that supplies of toxapheno and toxaphene-DDT emulsion are getting short, and some of the dealers are unable to locate stocks."

Texas: K. P. Ewing, Waco, wired on June 29: "Sovere outbreaks of yellow-striped armyworm and (garden) webworm occurring throughout central and north-central Texas and of webworm in northwest Texas. Considerable acreages of cotton being destroyed and more acreage seriously damaged. Toxaphene and 2:1 toxaphene-DDT mixture in emulsion form extremely scarce."

BOLL WEEVIL

Virginia: Wayne L. Howe, Associate Entomologist, Tidewater Field Station, Holland, reported on July 6 that boll weevil punctured squares were found in 7 of 8 fields examined in Southampton, Greenville and Nansemond Counties at an average rate of 8.7%. The infestations ranged from 1 to 18% punctured squares.

A news release issued July 4 by the Extension Service at Blacksburg stated: "The boll weevil, which was responsible for heavy losses in 1949 and 1950, now has shown up in Greenville County.

"Dr. J. O. Rowell, entomologist at V.P.I., again issued a warning to cotton farmers to be on the lookout for the weevil in their fields, and to be ready for immediate control,

"The insect had been reported earlier in experimental plantings at the Tidewater Field Station at Holland.

"Rowell warns that the weevils are a serious menace to the crop. They will multiply rapidly unless they are controlled promptly."

North Carolina: Cotton News Letter No. 15 issued by the Extension Service on July 6 reported: "Boll weevil infestation stepped up this week especially in eastern and Piedmont areas. There is considerable variation in the amount of infestation in individual fields with some fields still showing zero while others are showing up to 80% of squares ruined. Top infestations in untreated fields were 80% in Montgomery, 65% in Vance, 57% in Halifax, 64% in Cabarrus and 52% in Union. Bollworms seem to be on the increase generally over the State. Infestations are not high but fields need to be watched each week. A few red spiders were noted in Piedmont counties."

A release issued by the Agricultural Extension Service at Raleigh on June 18 stated: "Boll weevils are now appearing throughout the cotton-producing counties of North Carolina, but their activity is so irregular that farmers must make checks of their own fields to know when to start treatments."

In his weekly report on the boll weevil problem, George Jones of the State College Extension Service, suggests that the spotty weevil activity is probably due to the irregular growth of the crop. In many Piedmont fields the cotton was just coming up last week as a result of recent but delayed rains. In other fields, the cotton is beginning to square. The size of plants is irregular in most areas except in the extreme southeastern counties where squaring is general.

"To illustrate the variation in weevil activity, Jones cites the results of last week's survey in Anson County. Only one field of the four examined in Anson showed weevils, but in that one, the surveyors found 12 weevils per 100 plants or a 12% infestation.

"In Johnston and Robeson Counties, square infestations of 29% were found in 2 fields. Other fields showed from no infestation up to 9%."

South Carolina: J. G. Watts, Entomologist, Edisto Experiment Station, Blackville, wrote on July 6: "Our current cotton insect situation is about as follows: On regularly poisoned cotton there are about 2% to 5% of the squares punctured by the boll weevil, and on unpoisoned cotton from about 15% to 40%. There has been a light but rather general bollworm infestation. On regularly poisoned fields damaged squares will not run above 2% to 4%. There has been insufficient opportunity to examine unpoisoned cotton to establish a representative percentage but from limited counts the percentage will probably run considerably higher. Spotted infestations of red spiders are showing up but there is no indication



yet of general damage. Aphid infestations are very light. Larvae and eggs of the predaceous Chrysopa are common on poisoned cotton."

L. C. Fife reported on July 6: "Survey records were made in 60 nonpoisoned fields in 20 counties; all fields were infested. The square infestation averaged 31.8% as compared with 23.5% for the previous week and 65% for the corresponding week in 1950. In 4 fields the infestation ranged from 1 to 10%, in 18 fields from 11 to 25%, in 31 fields from 26 to 50%, and in 7 fields over 51%.

"Sixty poisoned fields were examined in 20 counties; 54 fields were infested. The square infestation averaged 11.3% as compared with 8.7% for the previous week and 11.7% for the corresponding week in 1950.

"In 26 fields the infestation ranged from 1 to 10%; in 24 fields from 11 to 25%, and in 4 fields from 26 to 50%."

Georgia: C. M. Beckham, George Sutton and E. T. Cody reported that during the week ending July 6 boll weevils were found in 141 of the 196 cotton fields examined in 34 counties. Of the fields that had been treated with insecticides for boll weevil control, 65% were infested with weevils at the average rate of 4.1% punctured squares. Of the fields that had not been treated with insecticides, 81% were infested with weevils at the average rate of 7.2% punctured squares. No weevils were found in the 6 fields examined in Worth County. The highest infestations were found in Piko, Coweta, Fayette, Walton, Pulaski, Polk, Piko, Brooks, Carroll, Franklin, Jackson, Madison, Meriwether, and Mitchell Counties. However only 3 fields, in Franklin, Meriwether and Pike Counties, had infestations higher than 25% punctured squares.

Florida: J. W. Wilson, Entomologist, Central Florida Experiment Station, Sanford, wrote on July 5: "The boll weevil infestation I wrote about on June 19 is developing quite rapidly. The grower was using  $2\frac{1}{2}$  pounds of toxaphene emulsion per acre for the control of tobacco budworm and bollworm quite successfully, when the boll weevil infestation was first discovered. Apparently the applications of toxaphene destroyed the invading adult weevils because counts made on June 21 showed a very light infestation of bollworms and no adult weevils. Counts on June 26 showed 2 to 14% squares punctured by boll weevils and a few scattered adult weevils. A brief examination June 30 showed 30 to 40% squares punctured and a considerable number of adult weevils."

Alabama: During the week ending July 7 Conrad J. Ward found boll weevils in 59 of the 61 fields examined in 9 counties in central Alabama. The average boll weevil infestation was approximately 12%. The highest infestations that ranged between 28 and 34% punctured squares were found in fields in Bibb, Coosa and Talladega Counties.

Mississippi: Mississippi Weekly Insect Report July 2: "An increase in the boll weevil infestation was noted during the past week. Rain over most of the State and a new crop of weevils probably caused the increase in the infestation. During the past week 679 farms in 47 counties were examined and 545 were found infested with an average square infestation of 14%. On two farms where squares were not present an average of 5 weevils per acre was reported. This compares with 173 weevils per acre and 10% infested squares last week. On this date last year an average of 688 weevils per acre and 22% infested squares were reported.

Weevils were reported from all over the State with the heaviest infestations being reported from Lee and Clay Counties where one field in Lee County had 96% of the squares infested and another field was reported as having a 90% infestation. In Clay County the highest infestation was 93% in one field and 90% in another. These high infestations may not indicate a general condition as few squares were present. As recommended last week, the Board urges farmers to check their cotton fields closely and apply control measures promptly when needed."

Mississippi Weekly Cotton Insect Report, July 9: "Boll weevils are generally present throughout the State but poisoning is helping to lower the high infestations of last week. Torrential rains in some sections of the State have interfered with insect control. Inspections during the week on 582 farms in 44 counties showed weevils present on 445 farms with an average infestation of 9% which compares with 14% last week and 20% on this date last year."

In the Delta the weevil infestation is still comparatively light. Of 432 fields examined in 17 Delta Counties 307 or 71% were infested as compared with 69% last week. Last week an average of 8% of the squares were punctured as compared with 7% this week. A year ago when 527 fields were examined 442 or 84% were found to be infested at an average rate of 13% punctured squares against 7% this year.

Tennessee: In a release issued by R. P. Mullett, Extension Entomologist, on July 3, it was reported that boll weevils were found in 59 of 88 cotton fields examined in 15 counties. No boll weevils were found in the 19 fields examined in Franklin, Lake and Obion Counties. Fields with more than 25% of the squares infested were found in Fayette, Hardeman, and McNairy Counties. Fields with more than 200 weevils per acre were reported in Chester, Decatur, Henderson, Hardin, Polk, and Lawrence Counties. Weevils were also found in Giles, Lincoln and Shelby Counties. There was an average of 16% punctured squares in the weevil infested fields and an average of 14% punctured squares in all fields where squares were examined. In the fields of young cotton still in the presquare stage there was an average of 198 weevils per acre in the infested fields and an average of 108 weevils per acre in all fields examined.

Louisiana: R. C. Gaines reported July 6: Rains over the State were favorable for weevil development in most areas and much poisoning for weevil control was reported from all sections. The average boll weevil infestation in 308 fields in 17 parishes was 9% punctured squares as compared with 16% last week. The decrease in percentage of punctured squares was largely due to the rapid increase in number of squares on cotton plants. One year ago the average infestation was 26% and in 1949 it was 13%. No punctured squares were found in 7 fields. The infestation ranged from 1 to 10% in 226 fields; from 11 to 25% in 56 fields; from 26 to 50% in 17 fields and in 2 fields more than 50% of the squares were punctured.

Average Percent Boll Weevil Infestations in Louisiana From 1943 to 1951, Incl.

Year	Week Ending								
	June			July			August		
	28	5	12	19	26	2	9	16	23
1951	16	9							
1950	--	26	19	20	21	23	27	44	37
1949	13	13	15	18	26	32	34	--	--
1948	6	7	11	14	20	21	32	--	--
1947	--	15	17	21	21	19	15	16	--
1946	35	24	41	49	51	68	73	--	--
1945	--	16	18	27	28	31	54	54	73
1944	10	10	8	9	15	10	21	14	--
1943	10	10	9	15	19	28	31	--	--



Arkansas: The boll weevil continues to be the most important pest of cotton. Squares were examined for boll weevil punctures in 384 fields in 14 counties. The average infestation was 12%. No punctured squares were found in 13% of the fields. The infestation ranged from 1 to 10% in 48% of the fields; from 11 to 25% in 23% of the fields; from 26 to 50% in 13% of the fields; and over 50% in 3% of the fields.

In the southeastern counties where records have been made for several years, the average infestation during the past week was 8% punctured squares, as compared to 17% last week. One year ago the infestation was 12% and in 1949 it was 31%.

In southwestern counties the average infestation during the past week was 23%, as compared to 11% last week and 40% in 1949.

Average percent Boll Weevil Infestations in Southeastern Arkansas (Ashley, Chicot, Drew, Dosh, Lincoln, and Jefferson Counties) From 1943 to 1951, Inclusive

Year	Week Ending								
	June		July			August			
	28	5	12	19	26	2	9	16	23
1951	17	8							
1950	--	12	15	10	20	19	30	42	53
1949	42	31	29	29	43	51	50	--	--
1948	6	5	4	7	8	16	23	19	29
1947	--	13	30	30	38	30	22	26	--
1946	--	12	29	15	37	37	41	48	--
1945	--	5	10	11	14	11	23	22	44
1944	--	--	5	5	2	3	3	3	--
1943	--	10	4	8	7	7	12	--	--

Texas: K. R. Ewing, Waco, reported July 9: The average boll weevil infestation in 741 fields examined in 89 counties was 15% punctured squares, as compared with 11% the previous week. The average infestation in the poisoned fields was 9% punctured squares as compared with 20% in the unpoisoned fields. These records compare with an average of 20% at this time a year ago. Out of the 741 fields examined, 110 or 15% had weevil infestations above the 25% level.

The now field generation of weevils in northern and eastern areas and scarcity of squares in many fields in southcentral areas are reflected in the higher weevil counts in many fields. Where cotton is heavily fruited and moisture is scarce considerable shedding is likely to occur. In cases of this kind a loss of 15 to 20% of the squares to weevils can be tolerated without loss in production, since the loss to weevils will replace what otherwise would have been natural shed. Cotton growers should inspect their crops frequently and when heavily fruited cotton reaches the 25% square infestation level, control measures should be applied. Areas where weevils are heavy and are likely to damage bolls two or three late season applications of insecticides should be made to give boll protection.

Oklahoma: The Weekly Cotton Insect Report issued by the Extension Service for the week ending July 7 stated that 228 fields were examined in 36 counties. Boll weevils were found in 163 fields in 30 counties. Fields with more than 50% of

the squares punctured were found in Jefferson, McIntosh, Pittsburg, Wagoner, LeFlore, Creek, Lincoln, and Pawnee Counties. Fields that had from 25 to 50% of the squares punctured were found in Cotton, Garvin, Grady, Atoka, Bryan, Mayes, and Okmulgee Counties.

#### PINK BOLLWORM

Louisiana: The Division of Pink Bollworm Control reported on July 5 that no pink bollworms had been found this season in Louisiana. Late in June more than 300 cotton fields were examined in Acadia, Calcasieu, Evangeline, Iberia, Jefferson, Davis, Lafayette, Pointe Coupee, Rapides, St. Landry, <sup>and</sup> Vermilion Parishes.

Texas: The Division of Pink Bollworm Control reported that the inspection of hundreds of cotton fields throughout June indicated that the pink bollworm populations averaged higher than a year ago during June in the counties of Atascosa, Bexar, Brooks, Calhoun, Jackson, Jim Hogg, Live Oak, Refugio, San Patricio, and Victoria Counties. There were fewer pink bollworms than a year ago during June in the counties of Dimmit, Duval, Frio, Kleberg, LaSalle, Maverick, Nueces, Webb, Zapata, and Zavala. There was little difference in the pink bollworm populations during June this year and last year in the counties of Bee, Jim Wells, Karnes, and McMullen. A few pink bollworms have been found this season in the counties of Goliad, Kinney, Medina, Uvalde, Val Verde, and Wilson. No pink bollworms have been found so far this season in the counties of Anderson, Austin, Bastrop, Brazoria, Caldwell, Chambers, Colorado, DeWitt, Falls, Fayette, Ft. Bend, Gonzales, Guadalupe, Hill, Houston, Lavaca, Liberty, McLennan, Matagorda, Nacogdoches, Travis, and Wharton. Late in June pink bollworms were found in green bolls in the counties of Bee, Brooks, Calhoun, Jim Hogg, Jim Wells, Kleberg, Live Oak, Nueces, San Patricio, and Starr.

#### BOLLWORM

North Carolina: On June 7 J. T. Conner, Jr., collected a small lepidopterous larva from cotton in Cleveland County that proved to be a bollworm, Heliothis armigera Hbn. (Det. by J. G. Franclemont)

Georgia: George Sutton, E. T. Cody and C. M. Beckham reported that during the week ending July 6 bollworms were found in 27 of the 112 poisoned fields examined and in 18 of the 84 non-poisoned fields. Bollworms were found in 24% of the poisoned fields and in 21% of the fields that had not received insecticides. The average bollworm infestation was slightly higher, 0.62%, in the poisoned fields than 0.38% in the fields that had not been treated with insecticides.

South Carolina: R. L. Walker and G. C. Finklea collected insects injuring cotton at Florence on June 7 and 8. The specimens from two fields proved to be the bollworm, Heliothis armigera (Hbn.), and from the third field the yellow-striped armyworm, Prodenia ornithogalli Gn. (Det. by J. G. Franclemont)

Alabama: During the week ending July 7 Conrad J. Ward found bollworms in 29 of the 61 fields examined in 9 counties in central Alabama. The heaviest bollworm infestations were found in Autauga and Elmore Counties. Less than 4% of the squares were damaged by bollworms in the 29 infested fields.

Louisiana: Bollworms and several other species of lepidopterous larvae increased during the past week. Some fields now require treatment for bollworms and tobacco budworms.



Arkansas: Bollworms are still present in most fields. The infestation is variable in the different areas. Some fields in southeastern Arkansas require control measures now. A. F. Clary, Federal Cotton Scout, in the southeast area reports as many as 13 worms and 4 eggs per 100 terminals in some fields. This is not general. This is the heaviest infested area reported. (Letter dated July 9 from Extension Service addressed to Certain County Agents in Arkansas)

#### MISCELLANEOUS INSECTS

Mississippi: E. W. Dunnam and S. L. Calhoun reported July 6: "An outbreak of the yellow-striped armyworm occurred in many Delta fields toward the latter part of the week. Square and boll damage was reported serious in some old cotton and poisoning was becoming general in many central and south Delta fields. Fields of young cotton, which came up following mid-June rains, were being severely damaged by at least 6 species of lepidopterous larvae, including 2 species of cutworms, the yellow-striped armyworm, garden webworm, fall armyworm, and one species of loopor."

The stalk borer, Papaipema nobris (Guenee) is occasionally reported as a pest of cotton in limited areas. On June 13 E. W. Dunnam submitted two lots of stalk borers he had received that day. One lot came from cotton grown in Carroll County but were submitted by E. F. Glaser, Greenwood; the other from two miles west of Pace in Bolivar County and were submitted by T. Y. Williford, County Agent. (Det. J. G. Franclemont)

Arkansas: Extension Service Letter on Cotton Insects dated July 9 stated that "Cutworms have been reported from Monroe, Jackson and Crittenden Counties in injurious numbers. Several species of cutworms are involved, but the black cutworm (Overflow Worm) has been reported prevalent. The black cutworm is a large gray cutworm that cuts leaves from the plant during the night and drags them underground for food during the day. Garden webworms are still rather generally distributed over the State. However, the infestation within a given field is usually spotted."

Tennessee: R. P. Mullott, Extension Entomologist, reported on July 3 that aphids were found in 45 of the 88 cotton fields examined in 15 counties; thrips were found in 24 fields; lepidopterous larvae were noted in 27 fields; flea beetles in 28 fields, grasshoppers in many fields, but causing noticeable damage in only two fields; rapid plant bugs and tarnished plant bugs were recorded in 17 fields.

Texas: Ivan Shiller made some collections of larvae from cotton plants 3 miles west of Brownsville. All were determined to be the cotton boll cutworm, or yellow-striped armyworm, Prodenia ornithogalli Gn. (Det. by J. G. Franclemont)

K. P. Ewing reported on July 9 that the yellow-striped armyworms and garden webworms are decreasing, although they continue to do serious damage to cotton in spots scattered throughout many sections of central and northcentral and northwestern Texas.

On June 5 Messrs. Monk and McClung collected lepidopterous larvae from cotton three miles north of Devine, Medina County, that were determined by H. W. Capps as the garden webworm, Loxostege similalis (Guen.), and in the same locality other larvae were collected that were identified by J. G. Franclemont as the beet armyworm, Laphygma exigua (Hbn.). Both of these insects are at times serious pests of cotton over wide areas.

On June 22 Douglas Earley, Los Fresnos, Cameron County, reported thousands of moths in cotton fields. A moth submitted by A. J. Chapman was determined by H. W. Capps as the garden webworm, Loxostege similalis (Guen.).

Larvae collected from cotton in Goliad County on May 28 determined as yellow-striped armyworm, Prodenia ornithogalli Gn. (Submitted by K. P. Ewing, det. by J. G. Franclemont)

K. P. Ewing submitted 19 cutworms taken from cotton in McLennan County on June 19. J. G. Franclemont found 17 were the pale-sided cutworm, Agrotis Malefida Gn., and 2 were the granulate cutworm, Fettia subterranea (Fab.).

Lepidopterous larvae collected on cotton in Tillman County on June 18 were determined as the bollworm, Heliothis armigera (Hbn.); and in McLennan County on June 21 as "loopers" belonging to the Autographa group. (Submitted by K. P. Ewing, determined by J. G. Franclemont)

Oklahoma: Damage caused by webworms (probably the garden webworm, Loxostege similalis (Guen.)) has decreased considerably during the past week. (Oklahoma Weekly Cotton Insect Report for week ending July 7)

#### INSECTS ATTACKING COTTON NEAR VALLES, SAN LUIS POTOSI, MEXICO

A. J. Chapman collected 25 lepidopterous larvae from cotton on May 31 at four localities within 18 miles of Valles, San Luis Potosi. There were 18 specimens of the bollworm, Heliothis armigera; 1 tobacco budworm, Heliothis virescens; 2 specimens of Prodenia species, possibly latifascia Wlk.; 3 loopers belonging to the Autographa group, and 1 specimen of the subfamily Catocalinae. Genus and species not recognized. (Det. J. G. Franclemont)

#### APHIDS

Texas: Two collections of aphids made in Smith County on June 5 and submitted by K. P. Ewing were determined as the cowpea aphid, Aphis medicaginis Koch. (Det. L. M. Russell)

#### COTTON INSECTS IN THE LOWER RIO GRANDE VALLEY OF TEXAS

Excerpts from "Cotton Insect Survey of the Lower Rio Grande Valley, Report No. 17" issued on July 5 by A. N. White, San Benito: "The boll weevil population has sharply increased in some sections of the Valley during the past week. The infestations are scattered but they are being found particularly bad around Donna, Alamo, Pharr, McAllen, and Mission in southern Hidalgo County. Some infestations in the 15-25% range have also been found in southern Cameron County near Brownsville and Santa Maria. Weevils are in their migration period now and they can move quickly and do considerable damage in a short time.

"Fleahoppers are present in some degree in many Valley fields. Most fields are beyond the stage of fleahopper damage at this time, however, as it is doubtful if the tiny squares which they destroy will have time to bloom and make bolls of pickable cotton between now and the stalk destruction deadline. Where a full crop of fruit has not been set and 15-25 or more fleahoppers are found per 100 terminals, it will be wise to control these pests.



"Bollworms, aphids, and red spiders are present in a few fields, but at the present time are causing very little damage to the cotton in this area."

Excerpts from "Cotton Insect Survey of the Lower Rio Grande Valley, Report No. 16" issued on June 28 by A. N. White, San Benito: "Insects in general are not causing a great deal of concern. Cotton fleahoppers are increasing in some fields, as a result of the recent rains, but most of the early planted cotton is beyond the stage where they can cause much, if any, damage. Late planted fields, however, should be watched and control measures used when needed as recommended in the Guide.

"Boll weevils have not as yet caused much damage and very little poisoning has thus far been done for their control. With the recent rains, however, they are likely to increase rapidly during the rest of the season, and fields that are still fruiting should be inspected regularly and control measures used as needed before the infestation becomes too high, especially where the cotton has made a rank growth. It is also about time for the weevils to migrate, and when this occurs, damaging infestations are likely to develop very quickly.

"For the most part, damage from bollworms continues to be light. Fields that are still fruiting well should be inspected twice a week for them, and, if injurious infestations occur, control measures should be applied before the worms have a chance to work on the bolls.

"Thrips are still causing damage in some fields, but they are much less numerous than some two or three weeks ago.

"Red spiders continue to cause some damage, but the infestations have not increased to any appreciable extent over the previous week, according to the survey reports and observations.

"No occurrence of the cotton leafworm has thus far been recorded for this season."

#### IRRIGATED COTTON OF THE SOUTHWEST

California: Gordon L. Smith and Thomas F. Leigh, Agricultural Experiment Station, Berkeley, reported June 26 on "Cotton Insect Conditions in California to July 1, 1951, as follows:

"San Joaquin Valley: Spider mites have been the most common cotton pest to date throughout the cotton-growing districts of this valley. The two-spotted mite, Tetranychus bimaculatus Harvey, is common to numerous on cotton, alfalfa, corn, Johnson grass, Malvaceae and legumes in most of the south and eastern part of the valley. The Atlantic mite, T. atlanticus McG., is common on cotton, alfalfa and legumes in the south, east and central parts of the valley. The Pacific mite, T. pacificus McG., which appeared early on cotton only in West Fresno County is found now only occasionally on cotton there but is continuing to build up on alfalfa (mostly alfalfa seed crops) in that area, and occasional infestations on cotton have been found recently in the south and southeastern part of the valley. Thrips on young cotton, mostly Thrips tabaci Lind., seriously injured foliage and buds during the periods of slow growth of cotton. The groasy cutworm, Agrotis ypsilon (Rottensburg), was very destructive to young cotton in localized areas. Seedlings were cut off beneath the soil surface which made control by any methods or insecticides employed unsatisfactory in some areas. The cotton bollworm, Heliothis armigera (Fabr.) is much more



abundant on early sweet corn than in 1950 and some small worms and eggs have been found on cotton. Lygus bugs are somewhat more numerous than in 1950 and in some fields in the south and east central part of the valley they have reached the economic level of infestation of 6 per 50 sweeps through a single row.

Coachella and Imperial Valleys: Lauren D. Anderson and Harold Reynolds, University of California, Agricultural Experiment Station, Riverside, report: "We have made surveys on cotton fields in Coachella and Imperial Valleys the early part of this week. The spider mite problem (probably Atlantic mite) which was so abundant earlier in the season when the plants were small, seems to have practically disappeared at this time without the use of sulfur or other acaricides. Also the cutworm problem which was quite severe in Imperial and the Blythe area earlier in the season did not last long and in most instances good control was obtained by DDT sprays, dust, and baits, especially when the field was irrigated before insecticide treatment. There were several fields severely damaged in Imperial County before the proper method of treatment was developed.

"In regard to pests in the cotton, at present lygus bugs are quite abundant in Imperial Valley, especially in cotton near alfalfa fields. The counts range from 8 to 22 per 100 sweeps of the net in many of the fields. They are practically all adult bugs and no nymphs. Neighboring alfalfa fields which are in bloom and probably being saved for a seed crop, have lygus bug counts of 2 to 3 adults and 10 to 15 nymphs per sweep in untreated fields. The lygus bugs do not seem to be causing any damage in the cotton fields at present. The cotton at present is from knee to hip high and the lower round of bolls are well set and many tiny bolls are in the process of being set in the middle section of the plants and most fields are in heavy bloom at this time. The cotton bollworm population seems to be very low at present, less than 1% in the fields examined."

Arizona: The injurious hemipterous insect populations on cotton continued low in the Salt River Valley in Maricopa County, although the Lygus bug counts are increasing in some areas. Bollworms, beet armyworms and spider mites are appearing in scattered fields. Thrips populations are high in most unpoisoned fields in the Eloy area in Pinal County. Field examination in Pima County show very low populations of sucking insects. Beet armyworms are being controlled with insecticides in a few fields. The spider mites are fairly general in the Safford Valley in Graham County, but thus far the infestations are low and do not require control.

New Mexico: The New Mexico Cotton Letter issued by the Extension Service, for the week ending July 4 reported: "Aphids are diminishing in number in all the cotton-growing areas. A few farmers have had to apply control measures, but infestations, if any, have been confined to individual plants. Thrips continue to cause some trouble but excellent control has been realized in most cases where treatments have been applied. They were still the chief concern in the Deming area and the Mesilla Valley, but are diminishing in numbers in the Pecos Valley and in the Lovington area. Infestations of Lygus are still very light in most areas of the State. In the Deming area, they are reported to be increasing rapidly with many nymphs and some adults being picked up in sweep nets. Around Carlsbad, they have been found in a few fields, but their numbers do not warrant control at this time. Some fleahopper damage has been reported from Eddy County. In the other areas, infestations, if any, are extremely light. Red spider is still being found in the Deming area, but its damage does not warrant control measures. Damage from sugar beet armyworm has been reported from the Animas area, Mesilla Valley, Pecos Valley, and the Lovington area. Excellent control has been realized where treatment has been applied."

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